

ENDOW

PRELIMINARY FINDINGS AND RECOMMENDATIONS



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Governor's Designee and Chairman, ENDOW

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Vice Chairman, ENDOW

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Jerad Stack of Casper, Entrepreneur and Founding Member of Breakthrough 307

Wally Wolski of Yoder, Goshen County Economic Development Corporation

Matt Kaufman of Cheyenne, Co-founder of Array School of Technology and Design

Ray Fleming Dinneen of Cheyenne, Founder of CLIMB Wyoming

Mary Ellbogen Garland of Laramie, President of John P. Ellbogen Foundation

John Temte of Laramie, Founder of Temte Capital

Steven Moldt of Riverton, President of Inberg-Miller Engineers

Cy Lee of Fort Washakie, Executive Director of the Wind River Development Fund

Ike Eastman of Powell, President of Eastmans' Publishing

Bob Viola of Jackson, Founder of Square One Systems Design

Barbara Hoefft of Jackson, Managing Partner of Willow Street Group

Barbara Sessions of Afton, Vice President and CFO for Silver Star Communications

Cindy Johnson of Green River, President of the Para-Transit Division of Syncromantics

Bret Pizzato of Rock Springs, Plant Manager for J.R. Simplot

Steve Russel of Evanston, Former CEO of Carbon Fiber Technology

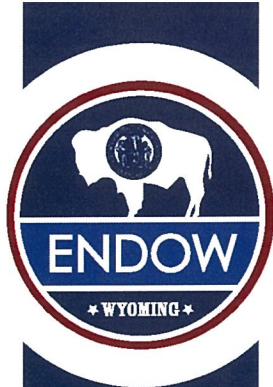
Senator Eli Bebout of Riverton, President of the Senate

Representative Steve Harshman of Casper, Speaker of the House of
Representatives

Senator Michael Von Flatern of Gillette, Vice President of the Senate and
Chairman of the Senate Minerals, Business and Economic Development Committee

Representative Mike Greear of Worland, Chairman of the House Minerals,
Business and Economic Development Committee

Acknowledgements: Great appreciation is given to the staff members of the Governor's Office, Wyoming Business Council, Department of Administration and Information, Economic Analysis Division, Department of Workforce Services, University of Wyoming, Wyoming Community College Commission, and the entire ENDOW support team whose leadership, dedication and extensive contributions have made this report possible. We are deeply grateful and extend our heartfelt thanks to the many people across Wyoming and otherwise who have offered advice



December 31, 2017

Dear Governor Matt Mead and Members of the Joint Minerals, Business and Economic Development Interim Committee,

The Economically Needed Diversity Options for Wyoming (ENDOW) Executive Council is charged with charting a new course for Wyoming's economy. The Executive Council, which met during the latter half of 2017, has been guided by grassroots input received from all over the state. Feedback was peppered with true Wyoming grit and candor, and also a marked hope for better collaboration, insight, and results. The Executive Council spent most of this first phase listening. That will continue, as it should. As we move into 2018, we will work with you to make the recommendations contained in this report – a reflection of what we heard – effective.

The themes identified, to date, fall into three broad categories that will form the framework of our future work: (1) identify and diminish existing barriers; (2) enhance or develop enablers; and (3) identify new and existing economic segments – future “economic engines” – that have high potential to drive growth and economic diversification. This framework is depicted below and definitions of the frameworks components are as follows:

Barriers: Reducing or eliminating barriers will strengthen appeal for businesses and citizens to succeed in Wyoming.

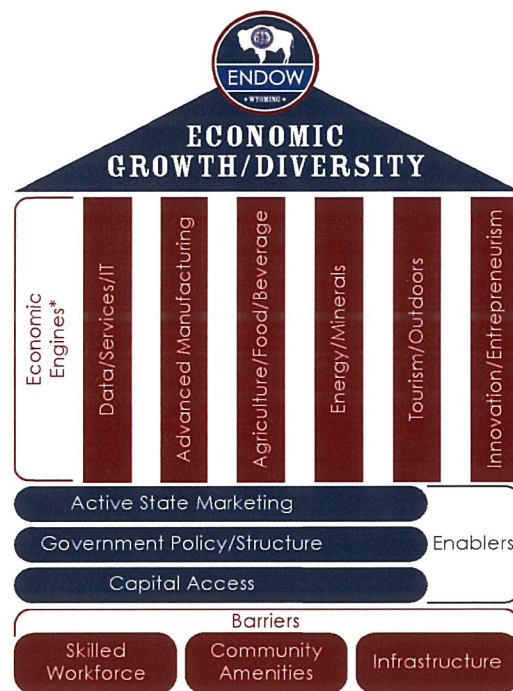
Enablers: Fortify efforts in these areas to diminish barriers and create vibrant opportunities.

Economic Engines: Areas of opportunity based on Wyoming strengths, business trends, and expertise.

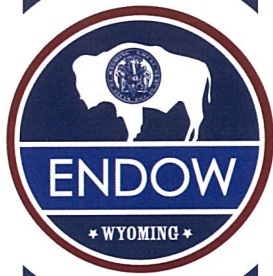
Senate Enrolled Act No. 64 (2017 General Session) requires the Executive Council to submit its preliminary findings and recommendations, by December 31, 2017.

Those are contained in this report. We appreciate the wisdom of the legislature in allowing for a preliminary interim report of this nature. While this work is critical for a vibrant Wyoming, the legislative oversight in creating checkpoints for this process – a marathon, not a sprint – is helpful to the Executive Council, grappling with major complexities familiar to you all.

The items discussed in this report represent a subset of what will be included in our next report – Wyoming's 20-year comprehensive economic diversification strategy due August 1, 2018. Between now and submittal of our next report, we will work to deepen and refine



*Economic Engines for demonstration purposes only at this time. A list of Economic Engines for further evaluation will be determined by the ENDOW Executive Council in 2018.



the final recommendations, particularly in terms of enablers and “economic engines”. We plan to provide a more specific roadmap for action steps and believe that this effort, which balances urgency with accountability to the public and its participation, will strike the right notes with your continued guidance and vision.

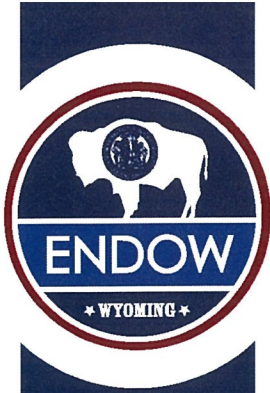
The recommendations here are primarily focused on reducing existing barriers, which often are a result of our small population and serve to thwart economic growth. Some examples include infrastructure bottlenecks, reliable wireless and internet service, access to healthcare, community amenities attractive to families and business, and a healthy pipeline of highly educated and skilled workers. Recognizing that we cannot overcome all barriers all at once, we are prioritizing.

The focus of the Executive Council’s work in 2018 will be to deepen our understanding of the key enablers that will drive future “economic engines”. Potential enablers thus far are strengthening access to capital; improving government policy; and development of a more effective and active state marketing program. A critical component of our work will be to better understand what other states have done to be successful in these areas.

These are not new ideas, but the commitment to truly collaborate and coordinate, along with an emerging attitude to “at least try,” as one Powell business leader put it, is an invitation to solve old problems with new energy and priority setting. Your leadership is critical, as your investment in newer approaches to air service and broadband investment will require support into the foreseeable future. The issues identified in this report have been long discussed in Wyoming. Many of the limitations we confront are a result of a lack of market power to attract private infrastructure investment. Air service and broadband in rural communities are the most immediate examples. Markets work and unfortunately they are not working to our advantage. The proposals herein suggest significant and continuing investment of these two areas. We should not embark on these efforts unless we fully understand they will be multi-year and multi-million dollar undertakings. If we are not prepared to act decisively and commit for a significant period of time, we are wasting time and money.

As previously highlighted, our single greatest focus for economic growth and diversification remains our workforce. We will continue to build on the emerging partnerships between state agencies, K-12, the University of Wyoming, community colleges, and others who are critical in developing workforce training programs. Our continued analysis will include an understanding of credentials demanded by business, a workover of training needs for traditional workers, and a new focus on non-traditional higher education users, like software engineers, reverse commuters, and entrepreneurs.

In terms of “economic engines” that will drive future diversification, we will ensure understanding of how Wyoming competes in the global economy and how to position Wyoming as a global competitor. This work requires time to develop a thoughtful framework for nurturing new sectors, including data services and information technology, advanced manufacturing, and startup companies. Expansion of existing sectors of agriculture, food and beverage, energy (renewable and traditional) and minerals, tourism and outdoor recreation, and tradable products will require development of its own framework focused on enhancing value for products, as opposed to relying on traditional



customers and markets. High on our list for more work is looking at the idea of business development and innovation zones to enable these efforts.

We are mindful of the fact that competing in the global market could well mean increasing the size of existing small businesses in Wyoming by accessing a new stream of customers. Our state has a track record of innovators, community champions, and businesses that have overcome unique Wyoming challenges. Our challenge is to better leverage their success through coordination, case studies, mentoring programs and capital incentives.

We are proud to support your efforts to diversify wonderful Wyoming by guiding the ENDOW effort. We remain steadfastly optimistic. We firmly believe that through focus, determination, and investment we can increase Wyoming's prosperity by developing a healthy, growing, diverse economy. After all, there's no better place than Wyoming!

Sincerely,

Greg Hill
ENDOW Chairman

Bill Schilling
ENDOW Vice Chairman

A woman with short dark hair, wearing a white lab coat and clear safety glasses, is looking through the eyepiece of a microscope. The microscope is a compound light microscope with a stage, objective lenses, and an eyepiece. The background is dark, and the lighting is focused on the woman and the microscope.

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A Note on the Report:

The present report is intended to satisfy the legislative requirements of the Executive Council due on December 31, 2017. The report details our findings and conveys our early recommendations in order to allow for actions and investments we believe are needed now.

This report outlines four main focus areas of findings and recommendations from the Executive Council for consideration, discussion, and action by Governor Mead and the Wyoming Legislature during the 2018 Legislative Session. The four focus areas are: infrastructure, education and workforce training, entrepreneurial development, and other areas. We include ten recommendations in these areas.

In addition to our ten recommendations we also support efforts encouraging research and development of Blockchain, Vertical Take Off and Landing (VTOL) technology, and renewable, wind energy development which are considered to have high potential for diversifying and differentiating Wyoming's economy.

This report also includes brief discussions on tax revenue and economic development. It has preliminary information on the strategy we are reviewing to define Business Development and Innovation Zones - a tool for economic diversification.

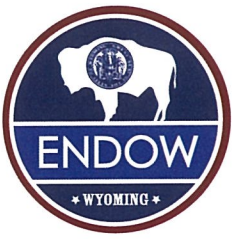
The Executive Council has been meeting across Wyoming since May 2017. We have held meetings and/or community tours in Cheyenne, Casper, Cody, Powell, Pinedale, Jackson, Sheridan, Buffalo, and Laramie. Meetings have been streamed on Facebook and social media has been used for input and outreach.

We have heard from citizens, state agencies, community business leaders and owners, entrepreneurs, economic development organizations, community colleges, UW, the five statewide elected officials, local elected officials, students from UW, internal experts, and external consultants. We have drawn upon the knowledge of Executive Council members and the ENDOW Advisory Board, a group of industry leaders from around the globe. This has provided a wide perspective and focused expertise. We thank each individual, business, and agency who took the time to contribute data, complete stakeholder evaluations and communicate with ENDOW leaders and staff.

Our findings have also been supported by the ENDOW Socioeconomic Assessment of Wyoming¹, August 31, 2017 and the ENDOW Stakeholder Outreach Recommendations and Final Report², November 2017.

¹ Socioeconomic Assessment of Wyoming – ENDOW August 2017
https://docs.wixstatic.com/ugd/7d64fb_f97a98b7483740999d0a82a7bc757c13.pdf

² ENDOW Stakeholder Outreach Recommendations and Final Report, DRU Consulting, LLC
https://docs.wixstatic.com/ugd/7d64fb_47189b79c62f4f07a991fe8c6bed8f53.pdf



ENDOW Preliminary Findings and Recommendations

December 31, 2017

Focus on Infrastructure

- Improve and Expand Wyoming's Commercial Air Service
- Improve Access to Broadband and Technology

Focus on Education and Workforce Training

- Provide Equitable Opportunities for Students to Learn Computer Science
- Improve Higher Education Attainment and Retention of Graduates
- Allocate Resources for Workforce Training

Focus on Entrepreneurial Development

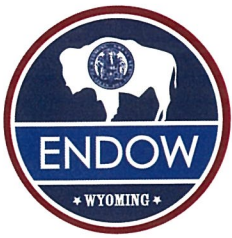
- *Startup: Wyoming* - Building Wyoming's Entrepreneurial Ecosystem
- Establish a Wyoming Research and Innovation Fund

Other Findings and Recommendations

- Establish In-State Contractor Preference for State Technology Contracts
- Authorize Virtual Currency Businesses to Operate in Wyoming
- Update ENDOW Statute

Additional Information

- Business Development and Innovation Zones – Preliminary Findings
- Tax and Revenue Analysis

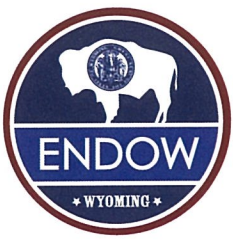


Anticipated Funding Requirements

Improve and Expand Wyoming's Commercial Air Service	\$15,000,000
Establish Broadband Coordinator, Advisory Board and Grant Fund	\$10,350,000
Provide Equitable Opportunities to Learn Computer Science	\$0
Improve Higher Education Attainment and Retention of Graduates	\$0
Allocate Resources for Workforce Training*	\$0
Establish a Wyoming Research and Innovation Fund	\$6,000,000
<i>Startup:Wyoming</i> - Building Wyoming's Entrepreneurial Ecosystem**	\$5,000,000
Establish In-State Contractor Preference for State Technology Contracts	\$0
Authorize Virtual Currency Businesses to Operate in Wyoming	\$0
Update ENDOW Statute	\$0
Total	\$36,350,000

**It is anticipated that funding will be necessary, however there are discussions underway that are necessary to determine and appropriate amount.*

***This proposal also requests that \$20 million be allocated by the Permanent Wyoming Mineral Trust Fund into a venture capital fund to invest in participating entrepreneurs.*



Focus on Infrastructure

Improve and Expand Wyoming's Commercial Air Service

Finding

Commercial air service is a significant limiting factor to expanding and diversifying Wyoming's economy. Multiple pressures within the aviation industry have forced many states to compete for a limited number of opportunities to solve this problem. Wyoming must be aggressive in finding a solution that will support attracting and retaining reliable air service. Air service is critical to supporting businesses, residents, and entrepreneurs.

The Aeronautics Division of the Wyoming Department of Transportation (WYDOT) has proposed a Commercial Air Service Plan (CASP) that will create a predictable, reliable and affordable option for air service in Wyoming.

Recommendation

The Executive Council supports WYDOT's 10-year CASP to augment the existing Air Service Enhancement Program (ASEP) and recommends the Wyoming Legislature appropriate funds necessary to fully implement an approved CASP.

Policy Mechanism

Legislative Action

Agency

Wyoming Department of Transportation

Performance Benchmark

Identified in the development of the CASP.

Resource Needs

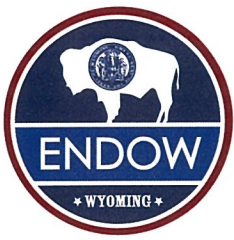
\$15 million

Additional Information

According to William Swelbar, Chief Industry Strategist, Delta Airport Consultants, Inc., "With the exception of Jackson, Casper and Gillette (and potentially Cody), Wyoming commercial air service is vulnerable by virtually any metric that is important to sustainable air service. Wyoming fares are 28 percent higher (\$106) than the national average. Colorado fares by comparison are 20 percent below the national average. Wyoming's other regional peers by comparison are at or near the national average.

"Air service and local and regional economies are inextricably linked. Guarding and fostering an endangered \$121 [billion] in economic activity at smaller communities is an economic reality for policy makers at all levels. The issue is whether to fix the many problems facing smaller community air service or continue to watch it degrade with resultant collateral economic losses."

From the written testimony of William Swelbar, to the Joint Minerals, Business and Economic Development Interim Committee on October 23, 2017



If we want to continue to support communities at current levels, over the next ten years, Wyoming would need to invest more than \$60 million in air service. ASEP plays an important role, but it is not sufficient to address Wyoming's commercial air service needs.

The Aeronautics Division of WYDOT has assembled a workgroup, which includes Executive Council and ENDOW Advisory Board members, to address commercial air service. This workgroup has identified an additive model – the CASP.

Through the CASP, the Aeronautics Division would contract with one airline to provide commercial air service to a major hub airport, such as Denver, with up to three flights per day. The plan would allow local communities and the state to influence local fares, flight times, and marketing. Further, the plan allows communities to participate, but they are not required to do so. This plan will not replace the current ASEP or its funding, this plan will not interfere with the Airport Improvement Program or its funding. The CASP includes the following:

- Establishment of state and local community matches
- Potential profit distribution
- Program Marketing
- Identification of an airline partner
- Identification of route, time, and fare schedules
- Establishment of goals and benchmarks

Improve Access to Broadband and Technology

Finding

Access to high-quality business and residential broadband is essential to developing, growing and attracting businesses, improving academic performance, supporting healthcare, promoting innovation and entrepreneurship, attracting investment, educating the workforce of the future, quality of life, and improving Wyoming's position as a global competitor.

The Federal Communications Commission (FCC) has established that, having "advanced telecommunications capability" requires access to actual download speeds of at least 25 Mbps and actual upload speeds of at least 3 Mbps. Wyoming ranks 46th in connectivity in the United States with an average speed of 17 Mbps³. Residents of rural Wyoming areas are limited by access.

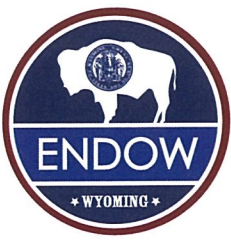
The Executive Council believes deployment of broadband is best achieved by the private sector and through public-private partnerships and recommends against regulating broadband like other utilities, such as water, natural gas, and electricity. The Executive Council believes the regulatory model is not ideal to achieve optimal industry growth and may result in undesired impacts.

Recommendations

Establish Broadband Coordinator and Broadband Advisory Council

Establish a Broadband Coordinator position in the Wyoming Business Council. The Broadband Coordinator and Broadband Advisory Council will be responsible for assessing and reporting on the status of

³ <https://broadbandnow.com/Wyoming>



broadband adoption and deployment across the state. They will provide the Governor and Legislature with recommendations and policy guidance to improve broadband coverage, speed, and accessibility. The Broadband Advisory Council's focus will ensure that broadband development will be at the forefront of the state's economic diversification efforts.

The Broadband Advisory Council members will represent a diverse group of interests, including: economic development, state and local government agencies, broadband providers, legislators, technology-related and other businesses, healthcare, education, libraries, public safety, and tribal representatives. Further, the Broadband Coordinator and Broadband Advisory Council would work with communities to ensure that local policies are conducive to broadband build-out.

The Executive Council recommends that representatives from ENDOW be involved in the recruiting and hiring of the coordinator and that the Governor's office formally supports the hiring choice as well as approving duties assigned and helping to clearly define his/her role.

Policy Mechanism

Legislative Action

Agency

Wyoming Business Council (WBC)

Performance Benchmark

A full set of performance benchmarks will be established by the Wyoming Broadband Coordinator and Advisory Council.

Suggested performance benchmarks include:

- By 2021 – 25 Mbps upload/3 Mbps download speed available in all Wyoming counties
- By 2022 - 1 Gbps speed available in 50 percent of business corridors in Wyoming counties
- By 2025 - 1 Gbps speed available in all business corridors in all Wyoming counties

Resource Needs

\$350,000 Biennial Appropriation

Establish a Wyoming Broadband Grant Fund

Federal grant funds are diminishing and federal deployment of broadband is transitioning to state block grants. A Wyoming broadband grant fund will facilitate direct investment in broadband infrastructure, particularly in rural areas without adequate access.

Such a grant program should require matching funds and be used primarily to expand broadband infrastructure and may be used to upgrade or enhance broadband infrastructure to increase speed and capacity.

Policy Mechanism

Legislative Action



Agency
WBC

Performance Benchmark

A full set of performance benchmarks will be established by the Wyoming Broadband Coordinator and Broadband Advisory Council (see above).

Resource Needs

\$10 million

Additional Information

A number of states have implemented similar programs. For example:

Minnesota implemented a \$20 million Border-to-Border Broadband Development grant program. The grant program gave priority to applications to underserved areas and also assigned projects that offer new or substantially upgraded service to community anchor institutions, telemedicine, economically distressed areas of the state, and projects that include digital literacy training and broadband adoption components.

Illinois implemented a Gigabit Communities Challenge grant program to award up to \$6 million in grants to projects that bring ultra-high speed broadband to Illinois communities. The program provides seed funding to build or expand world-class broadband networks in Illinois. The program targets network upgrades to improve employment opportunities and enhance economic development.

Focus on Education and Workforce Training

We want Wyoming residents to have access to programs that will prepare them for academic, career and life successes. Increasing education attainment starts with early childhood education. Currently, only 50 percent of children entering kindergarten are prepared for success. To achieve our ambitious goals, Wyoming must leverage its full education system from pre-kindergarten through post-secondary.

The State of Wyoming has a deep network of inter-related agencies with common goals to: provide a strong educational framework, build a knowledgeable and professionalized workforce and coordinate resources to maximize benefits of economic growth.

The Executive Council believes there are opportunities to connect these agencies' efforts with the ultimate goal of better communication, collaboration, reduced duplication of resources and accommodation of various learning pathways and business needs.

The Executive Council is interested in working with Wyoming's education and workforce training providers to evaluate alternative delivery and governance models. The proposed evaluation includes determining whether Wyoming's education and workforce training delivery systems are capable and flexible to support Wyoming's economic diversification objectives. Where necessary we will provide recommendations to the Governor and Legislature.



In addition to the following recommendations below we also believe financial literacy is an important component of an educated workforce.

Recommendations

Provide Equitable Opportunities for Students to Learn Computer Science

Finding

A qualified workforce requires literacy in computer science, including the study of both computer hardware and software design. Computer science has many branches, including artificial intelligence, software engineering, programming and computer graphics. The need for literacy in this discipline has grown as computers have become integrated into our day-to-day lives and technology continues to advance.

It is estimated that 71 percent of new science, technology, engineering and math (STEM) jobs will be in computer occupations between now and 2024, and only 8 percent of college graduates currently receive degrees in computer science. There are 500,000 computing related job openings in the United States but only 50,000 computer science graduates. It is projected that 1.1 million programming jobs will go unfilled up to 2022. These jobs are in every industry and every state and are projected to grow at twice the rate of all other jobs.

In May 2017 only five out of forty-eight school districts in Wyoming offered computer science classes.

Recommendation

The Executive Council recommends that the Wyoming Legislature:

- Ask the State Board of Education to adopt K-12 computer science standards
- Add computer science to the “Basket of Goods,” otherwise known as the “common core of knowledge and skills” located in W.S. 21-9-101(b)
- Allow computer science to count as a science graduation requirement under W.S. 21-2-304(a)(iii)(C)
- Allow computer science to count as a fourth year of math for the Hathaway Scholarship under W.S. 21-16-1307(b)(i) and (d)(i)

The Executive Council also suggests that the Wyoming Department of Education (WDE), community colleges and local school districts collaborate with local, statewide and national businesses and non-profits to enhance computer science student organizations and competitions.

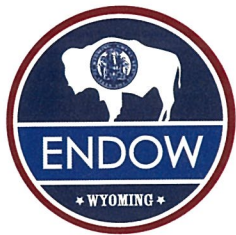
In order for Wyoming to be a regional and national leader in computer science education, opportunities for computer science education and programming must be explored at all levels, including for adult and senior learners.

Policy Mechanism

Legislative Action

Agencies

Executive Council, WDE, local school districts, and UW



Performance Benchmarks

- By 2020, all primary and secondary students in Wyoming have access to computer science curriculum, courses, student organizations, and competitions
- By 2022:
 - All Wyoming high school graduates have completed one course in computer science
 - UW grants more than 50 computer science degrees per year
 - UW computer science program is ranked as one of the top 25 programs in the country
- By 2024:
 - All Wyoming high school graduates have completed two courses in computer science
 - UW grants more than 100 computer science degrees per year

Resource Needs

None at this time

Improve Higher Education Attainment and Retention of Graduates in Wyoming

Finding

To achieve economic diversification, Wyoming will require that a higher percentage of its working population possess some form of post-secondary credential and the state must retain more of the graduates it produces.

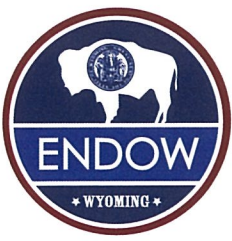
It is estimated that by 2025, 60 percent of America's workforce will need education beyond high school (for example: a degree, workforce certificate, industry certificate or other high-quality credential). Wyoming's rate of higher education attainment is 45.8 percent which is equal with the national rate. It is further estimated that of all workers 18 years of age, only 40 percent are still working in Wyoming ten years later⁴.

In November 2017, the UW Board of Trustees and the Wyoming Community College Commission (WCCC) established a higher education attainment goal for Wyoming's working population between the ages of 25-64 years of 60 percent by 2025 and 75 percent by 2040. This goal includes reducing disparities and achievement gaps among underserved populations, including first-generation, low-income, minority, and adult students.

The Executive Council supports the higher education attainment goal and suggests more aggressive efforts as outlined below. The Executive Council notes that by exceeding the attainment goals of neighboring states (Colorado and Utah have established goals of 66 percent by 2025), Wyoming will retain and improve its place as a strong competitor for jobs and developing businesses and, consequently, improve graduate retention.

Further, the Executive Council supports the ongoing efforts of the WDE and local school districts to incorporate workforce certificates, industry certificates or other high-quality credentials into educational programming at the earliest opportunity and suggests this effort should be expanded. It contributes to achieving our higher education attainment goals.

⁴ Glover, Tony., and Moore, Michael. A Decade Later: Tracking Wyoming's Youth into the Labor Force. Department of Workforce Services., Casper, Wyoming. March 2012. Retrieved November 20, 2017, (http://doe.state.wy.us/LMI/w_r_research/A_Decade_Later.pdf.)



The Executive Council will adopt Wyoming's higher education attainment goal as an ENDOW performance benchmark. Further, the Executive Council will monitor retention of graduates in Wyoming and the impact of migration.

Recommendation

The Executive Council supports the following:

- The Governor, by executive order, and the Wyoming Legislature, by joint resolution, should endorse an aggressive higher education attainment goal of 67 percent by 2025 and 82 percent by 2040, and, where necessary, lend support in efforts to achieve this goal.
- Wyoming should research and design a need-based state financial aid program to encourage college attendance and address achievement gaps focusing on underserved populations, including first generation, low-income, minority, and adult students.

Actions to achieve Wyoming's higher education attainment goal should meet the need of the state's businesses and be aligned with priority sectors identified by the Executive Council in its 20-year comprehensive economic diversification strategy as approved by the Governor.

Policy Mechanism

Executive and Legislative Action

Agency

Executive Council, UW, Wyoming's community colleges, the WCCC, WDE, local school districts, and other partners as appropriate

Performance Benchmark

By 2025, 67 percent (82 percent by 2040) of Wyoming's working population 25-64 years old possess a valuable post-secondary credential (certificate or degree). UW and the WCCC will provide annual progress reports.

Resource Needs

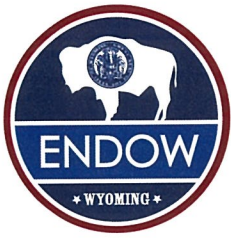
None at this time

Allocate Resources for Workforce Training

Finding

Workforce is Wyoming's single greatest inhibitor – and opportunity – for growth and stability. Addressing workforce training is critical to all economic diversification efforts.

The Executive Council has examined the economic diversification efforts of other states and engaged Wyoming communities. Our findings have been reinforced by industry leaders throughout Wyoming who have impressed upon us the need for a workforce with skills and technical certifications, as well as associates, bachelor and graduate degrees, to create a dynamic and sustainable economy. Access to effective workforce training programs will be an integral part of Wyoming's "toolbox" and better position Wyoming when an existing or new employer needs trained and talented employees.



Rapidly changing markets and technologies will present opportunities, but also challenges if Wyoming does not properly prepare. To build a sustainable, diversified, value-added economy, workers will need to develop skills to support Wyoming's existing, new and emerging sectors, while some may need to return to school to upgrade their skills (for example: incumbent, displaced, underemployed or unemployed workers).

Recommendation

The Executive Council supports efforts of the Wyoming Legislature to provide a sustainable source of workforce training funding to target long-term economic diversification successes. To prioritize resources, the Executive Council recommends that funding be allocated in support of the following:

- Establishment of a Priority Economic Sector Curricula, Equipment and Technology Grant program. This program will aid Wyoming educational institutions in the development of curricula and acquisition of equipment and technology to support workforce training in priority economic sectors identified in Wyoming's 20-year comprehensive economic diversification strategy. Funding should be available through a competitive process, in consultation with Wyoming businesses. It should be matched on a one-to-one basis from non-state funds.
- Establishment of a dedicated fund within the Workforce Development Training Fund for workforce training in priority economic sectors as identified in Wyoming's 20-year comprehensive economic diversification strategy. Use of training funds for apprenticeship training and structured internships or mentorship opportunities should be allowed.

The Executive Council recommends that no funds be disbursed until the Governor has approved Wyoming's 20-year comprehensive economic diversification strategy.

Policy Mechanism

Legislative Action

Agency

Executive Council and Department of Workforce Services (DWS)

Performance Benchmark

To be established in Wyoming's 20-year comprehensive economic diversification strategy, as approved by the Governor.

Resources Needs

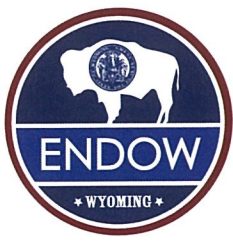
To be determined by the Wyoming Legislature

Focus on Entrepreneurial Development

Startup:Wyoming - Building Wyoming's Entrepreneurial Ecosystem

Finding

Wyoming's innovation economy is limited by the absence of a statewide startup ecosystem. The Executive Council has investigated numerous models for driving economic diversification through entrepreneurship,



specifically looking at Wyoming's regional and economic comparators such as Utah, Colorado, Oklahoma, and Texas, and Alberta, Canada.

Wyoming is at or near the bottom in state rankings for access to capital. Forty-six states have some sort of state sponsored capital access program for start-up companies⁵, South Dakota, Vermont, West Virginia and Wyoming do not. Utah has at least six programs and Colorado's program, Advanced Industries Accelerator, has invested nearly \$50 million in start-ups.

Communities that promote entrepreneurship and startup businesses:

- Successfully diversify their economies
- Create jobs for future generations
- Have systems and programs in place to bring talent together
- Provide the right resources (i.e. capital, localized expertise, mentorship, and space)

UW and organizations like Pitch Engine in Riverton, Silicon Couloir in Jackson, e2e in Laramie/Casper/Sheridan, and Wyoming Entrepreneurs in Cheyenne have developed entrepreneurial networks. Wyoming's entrepreneurial ecosystem will benefit from an organized, statewide network, enabling enhanced and shared programming and allowing for cross-state collaboration.

Recommendation

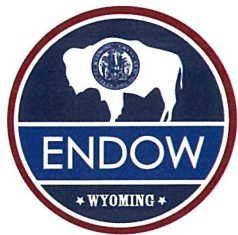
Accelerate the development of an entrepreneurial ecosystem in Wyoming, by creating a dedicated organization called *Startup:Wyoming* to provide capital access funds for startups.

Startup:Wyoming is envisioned to be a new Wyoming corporation engaged in entrepreneurial pursuits, with governance similar to the Wyoming Lottery Corporation (W.S. 9-17-101 through 128) or a Wyoming Industrial Corporation (W.S. 17-11-101 through 120).

Startup:Wyoming will:

- **Build the Statewide Entrepreneurial Network:** Align local entities through coordinated points of contact in every participating Wyoming community. Using the statewide network of organizations, Wyoming will foster more connectivity between entrepreneurs, investors, mentors, and talent. The organization will also be tasked with developing methods of communication formatted to reach a large number of stakeholders on a regular and consistent basis.
- **Provide Resources to Startups:** *Startup:Wyoming* will provide entrepreneurs with advanced resources to help their business succeed, including mentoring, marketing, legal, and other business coaching services.
- **Promote Space and Infrastructure:** In conjunction with the WBC and others, develop incubators, accelerators, co-working spaces or makerspaces. *Startup:Wyoming* will help promote the development of unique work spaces and equipment to foster entrepreneurialism.
- **Manage the 'Startup:Wyoming' Fund:** This fund will invest in promising high-growth startups that have potential to advance the entrepreneurial ecosystem. This helps populate Wyoming with

⁵ Mind The Gap – The Technology and Start-up Gap Funding Report (<http://www.innovosource.com/product/mind-the-gap/>)



talented entrepreneurs skilled in the art of creating new, knowledge-based businesses. This will also ensure that startup companies can access the capital necessary for seed-stage development or growth-stage funding. This fund could possibly be leveraged to recruit startups from other states.

- **Administer 'Kickstart: Wyoming' Grants:** These grants will be made available to early stage ventures to help build home-grown entrepreneurs. *Kickstart: Wyoming Grants* will be small seed grants ranging from \$5,000 to \$50,000. These grants could be amplified by UW as part of their new entrepreneurship endeavors and by other partner organizations, facilitating the expansion of the entrepreneurial ecosystem in Wyoming.
- **Manage the Small Business Innovation Research (SBIR) Matching Program:** The SBIR program provides billions of federal dollars each year to underwrite innovative projects that target critical government and private sector needs and is a key catalyst for funding America's small businesses. Following successful programs in states like Iowa and Kentucky, *Startup:Wyoming* would match SBIR awards to Wyoming companies. This approach will encourage Wyoming residents to participate in the SBIR program, recruit businesses to relocate to Wyoming, and increase the flow of federal research and development money into our state.

Policy Mechanism

Legislative Action

Agency

Startup:Wyoming

Performance Benchmarks

By 2022:

- Over 500 new jobs created in the Wyoming startup ecosystem
- Over \$25 million follow-on venture funding invested in Wyoming-based startups
- More than 40 companies have established roots in Wyoming

Resource Needs

- \$5 million biennial funding for programming, staffing, and operations for *Startup:Wyoming*, *Kickstart:Wyoming*, and *SBIR Matching Grants*
- An allocation of \$20 million to be invested in the *Startup:Wyoming* Fund from the Permanent Wyoming Mineral Trust Fund

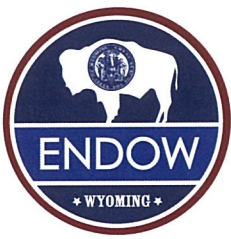
Establish a Wyoming Research and Innovation Fund

Finding

According to a report of the National Governors Association⁶, a technology-based economy requires:

- A strong intellectual infrastructure, such as universities and public or private research laboratories that generate new knowledge and discoveries
- Efficient mechanisms through which knowledge is transferred from one person to another or from one company to another

⁶National Governors Association Report - Using Research and Development to Grow State Economies, April 2000. (<https://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-ehsw-publications/col2-content/main-content-list/using-research-and-development-t.html>)



- Excellent physical infrastructure, including high-quality telecommunications systems and affordable, high speed internet connections
- A highly skilled technical workforce
- Good sources of capital

Over the last decade, Wyoming has made significant investments in the physical and intellectual infrastructure at UW, particularly in the areas of science and engineering, including the Michael B. Enzi STEM Facility, and Tier-1 Engineering Initiative.

To realize the potential of Wyoming's investment at UW, and to increase innovation, technology transfer and commercialization of discoveries made at Wyoming's public and private research institutions, it will be important to access additional federal science and engineering funding. Federal support for science and engineering research is provided through a variety of funding programs. Many of these programs encourage, and in some cases require, matching funds from non-federal sources. The availability of matching funds is often the deciding factor in the highly competitive quest for federal research dollars.

The Wyoming Research and Innovation Fund is envisioned as a source of these critical matching funds. Access to the Wyoming Research and Innovation Fund will be accessible to public, private and non-profit researchers pursuing priority research and development opportunities.

Recommendation

Establish funding for a Wyoming Research and Innovation Fund to build Wyoming's research and development base and to attract additional federal research and development funds.

To be considered for an award, an entity must have a plan to apply for an externally-funded grant specific to a priority sector identified in Wyoming's 20-year comprehensive economic diversification strategy and demonstrate that state funding will make a difference in attracting further research support. The fund should be administered by *Startup:Wyoming*.

Policy Mechanism

Legislative Action

Agency

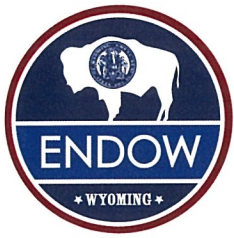
Startup:Wyoming

Performance Benchmark

- By 2022, attract \$100 million or more annually in federal science and engineering funding
- By 2026, attract \$150 million or more annually in federal science and engineering funding

Resource Needs

\$6 million



Other Findings and Recommendations

Establish Contractor Preference for State Technology Contracts

Finding

Wyoming spends approximately \$100 million on technology contracts annually. Data suggests that less than three percent of those contracts are awarded to Wyoming technology businesses. Our aim is to retain public monies in the state by ensuring that Wyoming contractors and residents receive state technology contracts. The state's purchasing power is a powerful tool in growing the technology sector in Wyoming. Further, Wyoming residents and businesses benefit from public spending when those funds circulate in the local economy.

Recommendation

Add a contractor preference for state technology contracts to state law. In addition, the Governor should require that state contracts, where possible, be of a manageable size allowing Wyoming technology contractors to bid on projects. The Governor should require state agencies to encourage out-of-state contractors, particularly on large contracts, to engage Wyoming technology companies as subcontractors.

Policy Mechanism

Executive and Legislative Action

Agency

Department of Administration and Information; Department of Enterprise Technology Services; DWS

Performance Benchmark

- By 2022, 40 percent of state technology contracts are awarded to Wyoming contractors.
- By 2022, 75 percent of state technology contracts include one or more Wyoming subcontractors.

Resource Needs

None at this time

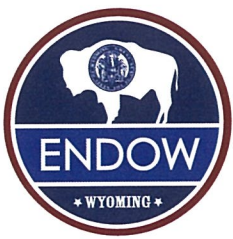
Authorize Virtual Currency Businesses to Operate in Wyoming

Finding

Virtual currency is a digital representation of value that is used as a medium of exchange, unit of account, or store of value; and does not have legal tender status as recognized by the United States or another government. Wyoming, Hawaii and Minnesota are the only three states where regulatory policy makes it effectively impossible to operate a virtual currency business. Wyoming residents must use unregulated, frequently offshore, virtual currency exchanges to buy, sell, and hold virtual currency.

Recommendation

Permit compliant virtual currency businesses to operate in Wyoming. This allows Wyoming residents to seek virtual currency, custodial, and other services from compliant, licensed businesses, rather than from unregulated offshore companies. It aligns Wyoming with nearly every other state in the country paving the way for a modern and innovative economy.



Policy Mechanism
Legislative Action

Agency
Wyoming Division of Banking

Performance Benchmark
None at this time

Resource Needs
None at this time

Update the ENDOW Statute

Finding
W.S. 9-12-1401 (a) does not reflect the composition of the Executive Council or the leadership structure adopted by the Executive Council.

Recommendation
Revise W.S. 9-12-1401 (a) as follows:

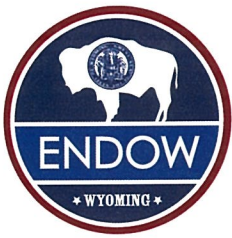
9-12-1401. Economically needed diversity options for Wyoming executive council; creation; appointment and terms of members.

(a) There is created the economically needed diversity options for Wyoming (ENDOW) executive council. The members shall represent existing, new and emerging economic sectors or subsectors or have demonstrated executive level experience. The council shall consist of not more than ~~twenty (20)~~ ~~fifteen (15)~~ voting members, appointed by the governor with the advice and consent of the senate. The presiding officers of the house and senate and the chairmen of the house and senate minerals, business and economic development committees shall be ex officio, nonvoting members. The governor may remove any appointed member as provided in W.S. 9-1-202. If an appointed member's position is vacant the governor shall appoint a new member as provided in W.S. 28-12-101. The governor, or his designee, shall be a member and ~~chairman~~ ~~cochairman~~ of the council, but shall not vote. The council shall elect a ~~vice-chairman~~ ~~cochairman~~ from among the appointed members. One-half plus one (1) of the appointed members shall have initial terms of four (4) years and the remaining members shall have initial terms of two (2) years. Thereafter, appointed members shall serve for terms of four (4) years.

The proposed statute change allows for greater industry and stakeholder representation and adopts a more traditional leadership structure, which is preferred by the Executive Council.

Policy Mechanism
Legislative Action

Performance Benchmark
None at this time



Agency
Executive Council

Resource Needs
None at this time

Additional Information

Business Development and Innovation Zones

Preliminary Finding

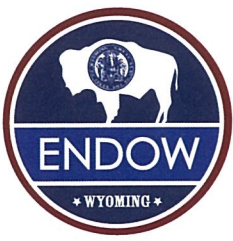
Business Development and Innovation Zones (BDIZ) are defined by statute WS 9-12-1401 (f) (i) to be “geographic areas within the state in which local, state and federal permitting and other regulatory requirements will be met for all significant segments of industry located in the zone or in which industries or businesses would be benefitted substantially as a result of being located in proximity to each other”.

BDIZs are meant to encourage private investment in Wyoming through regional business-driven collaborations, reduction of regulatory risk, innovative incentives, and infrastructure investments. They create unique environments where education, workforce training, research, public resources and private sector businesses come together with a result that benefits all stakeholders. They also establish strategic plans for the future using a regional framework for state funds.

The Executive Council believes that before geographic areas can be chosen, it is essential to develop an effective strategy and framework for business development and innovation zones as part of ENDOW's 20-year roadmap. Currently, the Executive Council is working on a three-zone approach⁷ for review and discussion. The three zones are envisioned to be interconnected. They are tools to leverage investment and energize a supportive ecosystem to inspire new businesses and strengthen legacy businesses. The three zone types are:

- 1. Regional Opportunity Areas** - This is an industry-driven strategy that will bring together education and training institutions, economic development organizations, and public sector partners around the needs of a specific industry. These areas will encourage regional collaboration and are delineated by common industry components, such as specialized labor markets, unique natural resources or other like elements. This will create synergies between the public and private sectors and aid in the appropriate implementation of state funding mechanisms and regulatory policy.
- 2. Innovation Centers** - These are physical places centered on developing new businesses. They typically leverage technologies and talent developed in institutions of research or higher education, both “in state” and recruited from out of state. These centers bring together educational institutions, promising startups, a knowledgeable workforce, sources of capital, and experienced mentors in an entrepreneurial space with high performance infrastructure. The Wyoming Technology Business Center at UW has business incubators in Sheridan, Casper and Laramie and are potential hubs for Innovation Centers.

⁷ BDIZ presentation to the Executive Council, October 2017 (<https://www.endowyo.biz/copy-of-news>)



3. Industrial Focus Zones - These leverage Wyoming resources and existing and emerging industries, such as wind, to add value within our legacy sectors of energy and agriculture. Investment and job growth in these zones will be encouraged by reducing regulatory barriers and making infrastructure investments.

The Executive Council is actively reviewing these strategies with stakeholders and will have more direction in the final strategy report on August 1, 2018.

Tax Revenue, Public Services and Economic Development

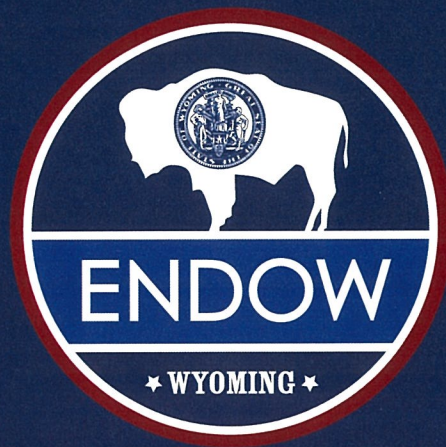
Senate Enrolled Act No. 64 (2017 General Session) calls on the Executive Council to “assess the relationship between incremental state and local tax revenues, costs of public services and economic diversification and make recommendations as appropriate”. The Executive Council determined, after discussion at its May 11, 2017 meeting, that tax policy recommendations are the province of elected officials at the state and local level.

Also at the May 11, 2017 meeting, the Executive Council adopted a working definition for fiscal sustainability: “a government’s ability and willingness to generate inflows of resources necessary to honor current service commitments and to meet financial obligations as they come due, without transferring financial obligations to future periods that do not result in commensurate benefit”.

The Executive Council understands the importance of sound, sustainable and equitable taxation to support public services, but does not have any specific recommendations on this issue. Tax policy is complex and is better left to policy makers. With that said, a stable and diverse tax system is important. It allows businesses in all industries to make long term investment decisions without risk of major changes in tax imposition. A diverse economy can broaden the tax base and reduce the volatility that the state has experienced in the past.

Published literature provides some insight into how tax imposition may affect economic growth; however, the research mostly examines taxes which Wyoming does not impose, specifically, personal and corporate income tax. Wyoming’s current tax structure is unique as compared to most other states. Wyoming imposes three main types of taxes: excise tax (including gasoline and diesel fuel), ad valorem tax and severance tax. Wyoming is one of only three states (Wyoming, South Dakota and Nevada) with no personal income tax or corporate income tax. This helps Wyoming consistently score very well in business index rankings. In fact, Wyoming is ranked number one in the Tax Foundation 2018 State Business Tax Climate Index.

In developing the final comprehensive economic diversification strategy, the Executive Council will utilize a tax policy insight model from Regional Economic Models, Inc. (REMI). This will help the Executive Council assess the fiscal impact of final policy recommendations and projected changes in Wyoming’s economy. Tax-PI is a dynamic fiscal and economic impact model and tool for evaluating fiscal and economic effects of policy or changes in government expenditures. This model allows state analysts to capture direct, indirect, and induced fiscal and economic effects and link the effects of taxation and other policy changes over multiple years. Tax-PI can be used to perform both economic and budgetary analysis at the state level. Analysts are able to assign policy variable drivers to each customized revenue source and expenditure and observe the short-and long-term dynamic feedback results on fiscal, economic, and demographic impacts.



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Prepared and Submitted by: Economically Needed Diversity Options for Wyoming (ENDOW) Executive Council

Submitted to:

- The Honorable Matthew H. Mead, Governor of Wyoming
- Legislature of the State of Wyoming through the Joint Minerals, Business, and Economic Development Interim Committee

December 31, 2017